similar procedures are enacted with the peripheral stump of the vagus, then no result ensues as regards the heart.—*Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften*, 1882, Band lxxxv.

RESPIRATION WHEN THE VAGI ARE ARTIFICIALLY IRRITATED. —Dr. Knoll has made several experiments upon this subject, using rabbits, mostly slightly narcotized. With induction currents on the central end of the vagus, there was, in accordance with Wedenskii, an expiration, whilst by increase of the strength of the current the well-known inspiration ensued. Although by long irritation of the vagus there must ensue by the arrest of the respiration a certain degree of dyspnœa, yet during the irritation no contraction of previously inactive respiratory muscles was observed.

The muscles assisting respiration, which previously were in activity, are relaxed by vagus irritation. The anæmia of the brain existing during the inspiratory arrest caused by the vagus-irritation calls out no respiratory movement.

During the inspiratory stand-still the respiration-reflexes from other nerves are either weakened or not retained at all. A part of the apparent irregularities in the action of the induction-current upon the vagus end depends upon the relation which the direction of the opening breaks stands to the distance of the irritation from the place of nerve-section. In the neighborhood of the section, weak ascending opening breaks are more active than similar strong descending ones. But two to three centimetres from the section we find, on the other hand, that weak irritations by the descending opening current in general are more active than the ascending ones. Hence in many cases there are obtained, by one and the same current strength, from the same part of the nerve, by changes of the direction of the current, sometimes expiratory and sometimes inspiratory results, or by gradually moving the electrodes from the place of section toward the cerebral end of the nerve. Sometimes the expiratory results are turned into inspiratory ones. By the use of different mechanical manipulations irritating the central end of the nerve, the conclusion was reached that the inspiratory action is the regular primary result of the action of mechanical irritations. Chemical irritants, which serve as side-conductors for the current of the nerve itself, call out complicated results. Temperature changes in the limits from + 2° to 60° C. have no action upon the central end of the vagus. Freezing the central end of the vagus caused no irritation.—*Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften*, 1882.

APNŒA.—Several experiments upon this state have been worked out by Dr. Philip Knoll. His results are as follows :

1. Artificial respiration in rabbits with intact vagi depresses the excitability of the respiratory apparatus.

2. The depression of the excitability of the respiratory apparatus by artificial respiration can be so intense that anæmia of the brain and spasms ensue, but no respiratory movement.

3. The artificial respiration depresses the excitability of the respiratory centres through a rhythmic irritation of the vagi by the rhythmic dilatation of the lungs.—*Sitzungsberichte der Kaiserlichen Akademie der Wissenchaften*, 1882.

MASSAGE.—Dr. Zabludoroski has made very careful experiments as to the effect of massage upon three persons. The three persons were living under similar conditions as to residence, activity, and nourishment, and two weeks before beginning the experiments, the nitrogen balance was constant. For eight days, under similar conditions, the weight was taken, the muscular strength of the hand, the bodily temperature in rectum and axilla, the pulse-frequence, the frequency of the respiration, the specific gravity of the urine, the acidity of the urine, the amount of nitrogen excreted by the kidneys ; also the amount of phosphoric acid, the amount of sulphuric acid, and the number of daily fœcal evacuations. The series of experiments were so arranged that the first eight days all estimates were made without massage ; then a series, ten days long, with daily general massage ; and finally, eight days long, without massage. In all three persons experimented upon, the muscular strength was increased. The body-weight of the corpulent person decreased, as also did that of a slender female, and corresponding to these conditions the quantity of nitrogen and sulphuric acid increased. By a moderately well-nourished person the body-weight increased, and here less nitrogen was excreted, but more sulphuric acid was given off. The after-effect of the massage disappeared the most quickly in the servant, whilst in the female it lasted during the whole period of observation.

As a result of massage of the abdominal muscles, the peristaltic movements were stronger, and the fœcal evacuations regular. Repeated observations showed more than measurements did an increase of the vital functions ; the body moved more easily, the appetite increased, and the sleep was quiet and sound. Massage of the upper part of the thigh caused erection. A man who raised a weight of one kilogramme, at intervals of a second, eight hundred and forty times, and by further strong exertion failed to raise it, was so much restored by massage of the same arm for five minutes, that he raised the same weight under similar conditions more than eleven hundred times. He also experimented upon animals. Massage of muscles caused a very complete perfusion, which brought in not only new nourishment, but completely removed the carbonized materials.

Massage reduces the excitability of the muscle as regards electric irritants. The sensory nerves in the skin lose considerable irritability through massage. Massage has a reflex action on